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of containers. Water is so scarce in the Garet that the Metalsa and Beni Bu Yahyi are accused by the other Riffians of giving their food-vessels to dogs to lick rather than washing them. (See plates 2 and 3.)

In the Garet during summertime the heat rises unmercifully, to such a temperature that it seems difficult to endure; in winter cold winds blow across it, and although the ground does not freeze and snow rarely falls, the inhabitants feel considerable discomfort in the flimsy shelter of their tents.

Winter snow falls regularly in Gsennaya, Beni Tuzin, Beni Urriaghel, Beni Amart, throughout the Senhaja Sghir, and in parts of the Ghomara, as well as in the Arabophone Senhaja. On Christmas day, 1926, several inches of snow fell at Ajdir, on the Bay of Alhucemas. In the valley of Beni Bu Nsar every winter the brook freezes over, and its course is obscured by several feet of snow, which smooths off the contours of the terraces; Taghzuth is almost as hard hit, and Beni Seddath and Beni Khennus are under snow for over four months of the year, while in Zarket the snowfall is so great that a whole column of Spanish troops perished in ten-foot drifts in November, 1926. The Spaniards occupying the posts in the Senhaja Sghir have organized a ski troop, composed of Riffians who, during the last two winters, have become adept in this new method of locomotion. (See plate 1.) Both the Riffians and the Senhajans seem perfectly acclimated to the snow, from a physical standpoint. They do not seem to mind the cold as much as do Europeans, and frequently walk for hours in the snow barefoot.

The Beni Bu Nsar, Beni Khennus, and Beni Seddath are as accustomed to snow as are we in New England, and endure a climate in no wise less rigorous.

FAUNA

As far as can be determined, no competent zoölogist has worked in the region discussed in this volume. Because of the inaccessibility of the country such a lacuna is not surprising. It is therefore with hesitation that one not versed in zoölogical classifications attempts to catalogue the animals found there. I have made a list of the mammals commonly known to the Riffians, with their Berber and Arabic names and their descriptions. By comparing these names with those given by Hanoteau and Letourneau for Kabylia and checking the descriptions with Dr. Glover Allen of the Zoölogy Department of Harvard University,[1] and by looking them up in Flower and Lydekker, I have arrived at tentative conclusions as to the identities of most of them. My guesses as to species should not be taken as premature and groundless identifications, but rather as suggestions intended to stimulate zoölogical interest in that area.

Mammalia

Ungulata

tighaidat u wazghar (Arabic *ghazal*), the gaselle. This animal is found in the flat arid regions west of the Muluya, in the tribes of Metalsa, Beni Bu Yahyi, Galiya, Kebdana, Beni Said, Beni Ulishk, and Beni Tuzin, and in southeastern Gsennaya.

Gazella mhorr and *G. dorcas* are common in Morocco, also *G. isabella*.

[1] Dr. Allen has kindly gone over this section in proof, making numerous additions and corrections.

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uthath, the aoudad. The Arabic word, here rendered in the French spelling, is derived from the Berber name and has been taken over into English. The aoudad is a mountain sheep of aberrant variety, the *Ovis tragelaphus*[1] (= *lervia*), which formerly was plentiful in the Rif but now is either extinct or nearly so. There are said to be individuals of this species surviving in Jebel Mulay Abd es Slam near Sheshawen. The aoudad, despite its classification, resembles superficially a goat rather than a sheep. Its horns, which are long, transversely grooved, and bent back, are still used as powder horns and as the ends of the *zammar*, a Riffian musical instrument.

afunes n jakhara, a species of wild cattle, smaller, more wiry, and more hairy than the domestic variety and with shorter horns. This creature survives in Jebel Bu Ma'awia, between Metalsa and Beni Bu Yahyi, and was frequently shot for food by the Riffian soldiers in the recent war.

Suidae

irif (Arabic *halluf el ghaba*), the wild boar, found everywhere in the region. It is the same species as the European wild boar, and extends all over North Africa. Species: *Sus scrofa*.[2]

Rodentia

Muridae

azharbo (Arabic *jarbu'a*), the jerboa, found everywhere in the region. *Jaculus jaculus* is the Algerian species.[3]

aghartha (Arabic *far el kheil*), some sort of woodmouse (probably *Apodemus sylvaticus hayi*) or wild mouse. Several species are probably included. Hanoteau and Letourneau even list one *far el kheil* as the polecat; they also find three insectivores and six murids bearing the same Arabic name.[4] The Kabyle word *thader'ar'ats*, which means both "polecat" and "dormouse," in Riffian means "mongoose." In view of such confusion one could hardly suggest a species for *aghartha*.

aghartha (Arabic *far*), the house-mouse. Riffians say that this is the same species as the preceding, the difference being entirely one of habitat. The Algerian species is *Mus musculus*,[5] the ordinary house-mouse or its ally, *Mus algirus*.[6]

Leporidae

ayarrith (Arabic *arneb*), the hare. The distribution is general. *Lepus kabylicus* is the species found in northern Algeria.[6]

akaniny (Arabic *koniya*), the rabbit. The distribution is general. *Oryctolagus cuniculus algirus* is the Algerian form.[7]

Hystricides

arrui (Arabic *dhurban*), the porcupine, found in Europe and North Africa, with spines often reaching a length of over a foot and a half. It inhabits caves throughout the region. Species: *Hystrix cristata*.[8]

[1] William H. Flower and Richard Lydekker, *Mammals Living and Extinct*, p. 356.
[2] *Ibid.*, p. 283; Hanoteau and Letourneau, p. 143.
[3] *Ibid.*, p. 144; Flower and Lydekker, p. 480.
[4] Hanoteau and Letourneau, pp. 143–144.
[5] Flower and Lydekker, p. 475.
[6] Hanoteau and Letourneau, p. 145; Flower and Lydekker, pp. 492–494.
[7] Hanoteau and Letourneau, p. 145.
[8] *Ibid.*, p. 144; Flower and Lydekker, p. 486.

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Insectivora

Erinaceidae

insi (Arabic *kanfud*), the hedgehog, found throughout the region. This animal makes itself useful by killing snakes. It is said that formerly the Riffians ate the hedgehog, but that once a woman of the Beni Amart, going out reaping, left her two babies in a brush shelter which she had constructed at the edge of the field. When she returned to them she found a cobra arching up in front of them, and a little hedgehog spitting at the cobra and keeping it at bay. In recognition of this favor the Riffians refrain from killing the hedgehog. This tradition may be recent, since the episode is supposed to have happened less than a generation ago. The *insi* belongs to the genus Erinaceus; the exact species is doubtful since, according to Flower and Lydekker,[1] there are about twenty different ones. Hanoteau and Letourneau [2] identify the animal bearing the same name in Algeria as *Erinaceus* (=*Aethechinus*) *algirus*.

Carnivora

Viveridae

thawartha, a large mongoose greater in size than the *mush abaran*. It kills snakes, is variegated in color, and has bristly hair and a long tail. It is found throughout the region, except in the more arid portions to the east. Hanoteau and Letourneau do not mention this animal as existing in Kabylia. Dr. Allen suggests that it may be *Herpestes ichneumon*,[3] which was sacred to the Egyptians.

sibsib (Arabic *zerdi*), a small species of mongooses. Hanoteau and Letourneau [4] identify an animal of the same name as *Mangusta numidica*. Dr. Allen thinks that the *sibsib* may be a *Calogale*.

isgith may be the *Genetta africana* mentioned by Hanoteau and Letourneau,[4] or the *Genetta vulgaris* of Flower and Lydekker.[5]

Mustelidae

nims (Arabic *nims*), a weasel or polecat, found throughout the region where any forest or moisture remains. Hanoteau and Letourneau [6] call the *nims* of Kabylia a polecat, giving it the name *Putoris bocamela*. Yet the Berber name which they give it, *thader'ar'ats*, in Thamazighth means "mongoose," being another word for *thawartha*. Dr. Allen suggests that the *nims* may be *Mustela africana*.[7]

akazin w aman, or *ar w aman* (Arabic *kelb el ma*), the otter, found wherever there are streams and irrigation ditches. The animal causes constant annoyance by making holes in the ditches and uprooting gardens, as well as by stealing poultry. The animal of the same name and description in Kabylia is called by Hanoteau and Letourneau *Lutra vulgaris*.[6,7]

Felidae

bu haru, anciently *izim* (Arabic *seba*, *asad*), the lion. Lions, which were common in the Rif in the seventeenth century [8] and were killed at intervals up to forty years ago,[9] are now believed to be extinct or nearly so. It is popularly believed by the natives of Gzennaya

[1] Page 630.
[2] Page 144.
[3] Flower and Lydekker, pp. 535–536.
[4] Page 142.
[5] Page 528.
[6] Page 143.
[7] Flower and Lydekker, pp. 589–590.
[8] Sieur Roland Frejus, *Relation of a Voyage into Mauretania*, p. 26.
[9] Otto C. Arthaurr, *Riffpiraten und Ihre Heimat*, p. 154.

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that an old lion still lives in the bushes around the tomb of Sidi Mhend, near the village of Bured. The lion was pursued into these bushes about forty years ago by a large party of beaters, and is said to have been seen about once a year ever since. There is only one species, *Felis leo*.[1]

aghires (Arabic *nimr*), called by Hanoteau and Letourneau[2] the panther or leopard. This animal has been extinct in northern Morocco, by popular account, for over a hundred years. It is believed that there is no female of the *aghires*, and that it is reproduced in the following mythical manner. A lioness bears seven cubs in her first litter, six in her second, five in her third, four in her fourth, three in her fifth, two in her sixth; and in the seventh year (for she bears but one litter a year) she produces a single creature, the *aghires*, which is stunted but wiry, and stronger than a true lion; after bearing it the lioness becomes barren. The fact that such a legend can be believed warrants the assumption that the *aghires* has been extinct for a considerable period. In Kabylia the animal called *aghilas* (French transliteration *ar'ilas*) has been identified by Hanoteau and Letourneau[2] as *Felis pardus*. As in Morocco, the Arabic name is *nimr* (*gh* and *r'* are but two ways of transliterating the seventeenth character in the Arabic alphabet, and in Riffian dialects the normal Berber *l* becomes an *r*).

mush abaran (Arabic *ḥatt el khala*), a type of lynx or wild cat found throughout the Rif, Senhaja, and Ghomara, where any forest is left. Hanoteau and Letourneau[3] give for the *mush berran* of Algeria the specific name *Felis catus*, the wild cat. Dr. Allen suggests that the Riffian *mush abaran* may be *Lynx caracal*. This latter species is found in Algeria but is called *ursel*.[3] The fact that *mush abaran* has tufted ears tends to favor Dr. Allen's suggestion.

Canidae

oshun (Arabic *dib*). The Arabs use this word for all species.

oshun awithair (Arabic *dib*). The Riffians recognize two species of dog-like animal, one at least of which is the true jackal. The *oshun*, the larger of the two, is different in appearance from the *oshun awithair*, which I have shot. Four of the former, which I saw in one evening, about dusk, looked as large as wolves — gray, and with straighter, more erect ears than the common jackal. At the time I thought them wolves, but later learned that the latter are not found in this part of North Africa.[3] Hanoteau and Letourneau[4] list but one species of jackal in Algeria, *Lupulus* (=*Canis*) *aureus*.

ohar (Arabic *tha'leb*), the fox. The Riffians distinguish but one species, but Hanoteau and Letourneau[4] find two in Algeria, *Vulpes atlanticus* and *Vulpes niloticus*.

Hyaenidae

ifis aghiul (Arabic *dheba'*), the striped hyaena, found everywhere in the region. It does not attack man. The species is *Hyaena hyaena*.[5]

ifis (Arabic *dheba'*). Here again the Arabs use one word for two species. This is the spotted hyaena, likewise found throughout the region. Neither Flower and Lydekker nor Hanoteau and Letourneau mention its presence in North Africa. The Riffians distinguish it from the *ifis aghiul* by its spotted markings, and by its habit of attacking man. Its

[1] Flower and Lydekker, p. 504.
[2] Flower and Lydekker, p. 548.
[3] Page 142.
[4] Page 141.
[5] Hanoteau and Letourneau, p. 142; Flower and Lydekker, pp. 541-543.

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method of attack, as described by the Riffians, is as follows. It stupefies men travelling at night with its odor, hypnotises the victim with its laughter until he falls down laughing, and then devours him. Despite the lurid nature of this portrayal, the accurate description of the animal's coat and the mention of its dangerous character imply that its existence is real. One of this species was run over and killed by an automobile owned by the Kaid Midboh of Gzennaya near Aknoul in March, 1928. Species: *Hyaena crocuta*, said to range south of the Sahara.[1]

Primates

rkird (Arabic *el. ḫird*), the Barbary ape. It was formerly distributed throughout the region, but is now limited to the mountain of Taghzuth, to Mt. Meggu behind Sheshawen, and to the pass of Bab el Ḥait in the Senhajan tribe of Beni Wenjin. The species is *Macacus inuus* according to Flower and Lydekker[2] and to Ghirelli;[3] *Pithecus inuus* Geoffroy according to Hanoteau and Letourneau[4] or *Macaca sylvanus* as currently used.

rkaramud (Arabic *el karamud*), a species of Cercopithecus, now extinct, said to have existed up until a hundred years ago. It was smaller than *rkird* and longer-tailed.

Chiroptera

thasrith ighathain (Arabic *ṭair el lil*), the bat. This animal lives chiefly in caves. Hanoteau and Letourneau[5] give two species for Kabylia, *Vespertilio murinus* and *Rhinolophus unihastatus*. Bats recorded by Thomas for Western Algeria are as follows: *Asellia tridens*, a leaf-nosed bat; *Plecotus christiei*, a long-eared bat; *Pipistrellus kuhle*, a small pipistrelle; *Myotis oxygnathus*, probably the brown bat called *v. murinus*.[6]

This list is not, of course, supposed to be complete. Among mammals unlisted are shrews and probably numerous species of wild mice.

Other Animals

It would be difficult to compile a list of the birds, and practically impossible, for other than a specialist, to enumerate the amphibia and reptiles, while the fishes are not well known to the Riffians themselves.

Mentioning but briefly a few of the birds, one might include a species of grouse or partridge, commonly hunted, and the wild pigeon. Varieties of hawks and eagles are abundant, and there is a strong tradition concerning a giant hawk-like bird, larger than a man and now extinct, which swooped down and carried off livestock and children. The last of these creatures, called *baran*, are supposed to have nested on the mountain beneath which took place the famous massacre of Spanish troops, at Dhar u Baran and Anual.

Among the reptiles one encounters species of land tortoise and several varieties of snakes, including such general Moroccan forms as the puff-adder, green python, cobra, and asp, all of which I have seen. Lizards abound and seem to represent numerous species, about one of which a curious legend has arisen. This creature is a small, laterally compressed

[1] Flower and Lydekker, pp. 541–543.
[2] Angelo Ghirelli, *El Norte de Marruecos*, p. 47.
[3] Page 143.
[4] Page 722.
[5] Page 141.
[6] Thomas, *Novitates Zoologicae*, vol. XX, p. 556; for central Western Sahara, *ibid.*, p. 23.

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reptile, green in color. When annoyed it puffs itself with air and exhales slowly, making an unpleasant noise. It is supposed to give birth to snakes, just as the lion is held responsible for the parentage of the panther.

Besides the snakes whose existence is unquestionable, one fabulous species is frequently mentioned. This creature is said to have a blunted tail, upon which it rises; using the tail as a lever it hurls itself through the air a great distance in the direction of its victim. The Riffians believe this firmly.

Fish are seldom seen in the smaller streams which empty into the Mediterranean; they are too swift, and, along their lower courses, too seasonal. In the Muluya, of course, fish are plentiful. What few there are in the mountain streams are eaten more by otters than by men, since the Riffians are not fond of fresh-water fish, although they preserve no definite tabu against them.

In the streams which empty into the Wergha on the Atlantic side of the watershed fish are more common, and are netted and eaten in Taghzuth and Beni Bu Nsar. Sea fishing, which has a special place under "Material Culture," [1] is carried on along practically all the coast.

[1] See below, p. 35.

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124--This lineage bears no relationship whatsoever to the jma'th of the same name in the Plain of Alhucemas; the latter, in any case, belongs to another clan, the Aith 'Ari.

125--The following lineages of the Aith Waryaghar are considered to be "Aith Ya'ra" or Bni Marin (and thus Zanatan) by descent:
In Aith 'Adhiya of Aith Bu 'Ayyash: Aith Tizi and Aith Fars in the jma'th of Ighmiren, Isi'arithen in that of Immudh, and Aith Busta in that of Tazurakhth.
In Aith Bu 'Ayyash Proper of Aith Bu 'Ayyas: Aith Wuzghar in the jma'th of Aith Bukhrif.
In Isrihan of Aith Yusif w 'Ari: Ishshuyen in the jma'th of Upper Ixatshumen and Ijarayen in that of Lower Ixatshumen.
Whether they are in fact descended from the Marinids (a dynasty in Morocco, 1213-1465) is problematical. What is sure, however, is that the inhabitants of the City of Nkur, which was destroyed by the Almoravid Yusif ibn Tashfint in 1084, could not possibly have been Marinids.

[114] 126--According to our notes, not only is there no dharfiqth of this name in Tazurakhth, but none of the lineages there are autochthonous, their ancestors all having come from elsewhere.

[196] 127--The term yinn, "those of", is roughly synonymous with aith, "people of:, but Rifians tend to use it only when speaking of lower level segments.

128--The name ibaranen means "partridges" (sing. abaran); the names of all the other small lineages listed here refer to the lineage ancestors.

129--In the Berber dialect of the Central Atlas, aghwilas means "panther" (fem. taghwilast), and the Rifian thaghirasth is a cognate [136] form. There are panthers still to be found in parts of the Central Atlas today, though none in the Rif.

[114] 130--This lineage is not named by Blanco, and our field notes show no record of it.

[114] 131--It would indeed. The question really is: why should any attempt have been made by the administration to reunite two or more related lineage branches after scission had occurred and after they had not only become separated in space but incorporated into new jma'ths? One might almost think that Blanco is looking (in vain, it must be added) for an artificial neatness in the lineage structure of Aith Waryaghar which has no correspondence with any social reality.

132--Although he has obvious misgivings about it, Blanco appears to resign himself, in this passage, to an acceptance of the structural status quo!

[114] 133--"Tributaries" is the wrong word here; "offshoots" would be better.

134--Mutual rights of two related jma'ths certainly include participation in the collection of fines, and in certain cases (according to inheritance) reciprocal rights in property cultivation; but they do not include contributions to the fqih, as each jma'th has its own fiqh.

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[114] [136] 196--This seems to indicate considerable confusion, both terminological and zoological, for the simple reason that there are no wolves proper in the Rif. A terminological confusion arises because Spanish dictionaries, both Rifian and Arabic, translate Rifian ushshan (pl. ushshannen) and Arabic dhi'b as "lobo, chacal", whereas properly it means only the latter: jackal. By the same token, uhar (pl. uharan) is a fox (not a jackal, as Blanco indicates); and thawardha probably corresponds to awardhyu (pl. iwardhiwen), listed by Ibáñez (op. cit., 1944, p. 439) as synonymous with uhar, "fox". We have never heard the word awardhyu in the Jbil of Aith Waryaghar, however.

197--In the Jbil of the Aith Waryaghar, the carcass of a dead animal is used as jackal-bait, and traps are laid around it.

[184] 198--This is in contrast to the situation in the Jbil of Aith Waryaghar, where division of the game and of the fines incurred are shared equally by all the hunters.

199--We have substituted "system of beliefs" for Blanco's term supersticiones as being somewhat more appropriate anthropologically.